

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)



Applicant's or agent's file reference <b>309PCT</b>	<b>FOR FURTHER ACTION</b>	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. <b>PCT/JP 2004/018955</b>	International filing date (day/month/year) <b>10.12.2004</b>	(Earliest) Priority Date (day/month/year) <b>12.12.2003</b>
Applicant <b>SANYO CHEMICAL INDUSTRIES, LTD.</b>		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box II).

3. ☐ **Unity of invention is lacking** (See Box III).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

- a. the figure of the drawings to be published with the abstract is Figure No. \_\_\_\_\_

☐ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

- b. ☒ none of the figures is to be published with the abstract.

## A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl<sup>7</sup> C09D175/04, C09D7/12

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl<sup>7</sup> C09D175/04, C09D7/12

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
 Japanese Utility Model Gazette 1922-1996, Japanese Publication of Unexamined Utility Model Applications 1971-2005, Japanese Registered Utility Model Gazette 1994-2005, Japanese Gazette Containing the Utility Model 1996-2005

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	JP 59-98125 A (CELANESE CORP.) 1984.06.06, whole document, especially claims & US 4423201 A & EP 107969 A2	1-7, 9, 11, 13-17 8, 10, 12
X A	JP 06-80738 A (NIPPON SEISHI K.K.) 1994.03.22, claims, [0019] (No Family)	1-6, 10, 13-17 7-9, 11, 12
X A	JP 10-508632 A (HERCULES INC.) 1998.08.25, claims & WO 96/14357 A1 & EP 789725 A1	1-6, 10, 13-17 7-9, 11, 12
X A	JP 10-251556 A (SANYO CHEMICAL INDUSTRIES LTD.) 1998.09.22, claims, [0011] (No Family)	1-6, 10, 13-17 7-9, 11, 12
X A	JP 2001-507391 A (SHELL INTERNATIONAL RESEARCH MAATSCHAPPIJ BV) 2001.06.05, claims & EP 951494 A1 & US 6160040 A	1-6, 13-17 7-12



Further documents are listed in the continuation of Box C.



See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search

08.02.2005

Date of mailing of the international search report

08.3.2005

Name and mailing address of the ISA/JP

Japan Patent Office

3-4-3, Kasumigaseki, Chiyoda-ku, Tokyo 100-8915, Japan

Authorized officer

KIYOKO TAMURA

Telephone No. +81-3-3581-1101 Ext. 3483

4V

9051

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	JP 2001-515118 A (EASTMAN CHEMICAL COMPANY) 2001.09.18, claims & WO 99/09104 A1 & EP 1003819 A1 & US 2003/105197 A1	1-6, 10, 13-17 7-9, 11, 12
X A	JP 2002-521545 A (Rhodia CHIMIE) 2002.07.16, claims & WO 2000/6641 A1 & FR 2781806 A1 & EP 1021483 A1 & US 6391952 B1	1-6, 10, 13-17 7-9, 11, 12
X	DE 10313317 A1 (TOYOTA JIDOSHA K.K.) 2003.11.20, whole document & JP 2004-2706 A & US 2003/220444 A1	1-17

The surfactants used in claims 1-7, 9, 11 and 13-17 render the definition of the subject matters of said claims unclear for the following reason:

The surfactants expressed with only the functional groups or small portions of them. Therefore, the person skilled in the art would not envisage the whole surfactants as chemical compounds, even with consideration of common general knowledge. The surfactants such as chemical compounds should be specified with chemical formulae.

The surfactants used in claims 1-7, 9, 11 and 13-17 would comprise a variety of chemical compounds, however only limited examples are disclosed in the specification and the skilled person cannot make from the description of the specification even with consideration of common general knowledge, it is considered that those claims and description of specification do not meet the requirements of PCT Articles 5 and 6.

This report was made on the basis of the disclosed examples in the specification. The subject-matter of claims 8, 10 and 12 are searched completely.